

TWO NEWLY RECOGNIZED SPECIES OF *BACCHARIS* (ASTERACEAE:
ASTEREAE) FROM MEXICO

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ABSTRACT

Baccharis crassicuneata Nesom, *spec. nov.*, is described from Coahuila, Nuevo León, and Tamaulipas in northeastern México. It is segregated from a broadly treated *B. bigelovii*, the typical portion of which apparently is more closely related to *B. thesioides* and *B. sulcata*. *Baccharis brevipappa* (McVaugh) Nesom, *comb. nov.*, is elevated to specific rank from *B. multiflora* var. *brevipappa* McVaugh. This species is morphologically and geographically distinct from *B. multiflora* and intergrades little if any with other taxa of the "*B. multiflora* group." A key is provided to the species of the *B. multiflora* group.

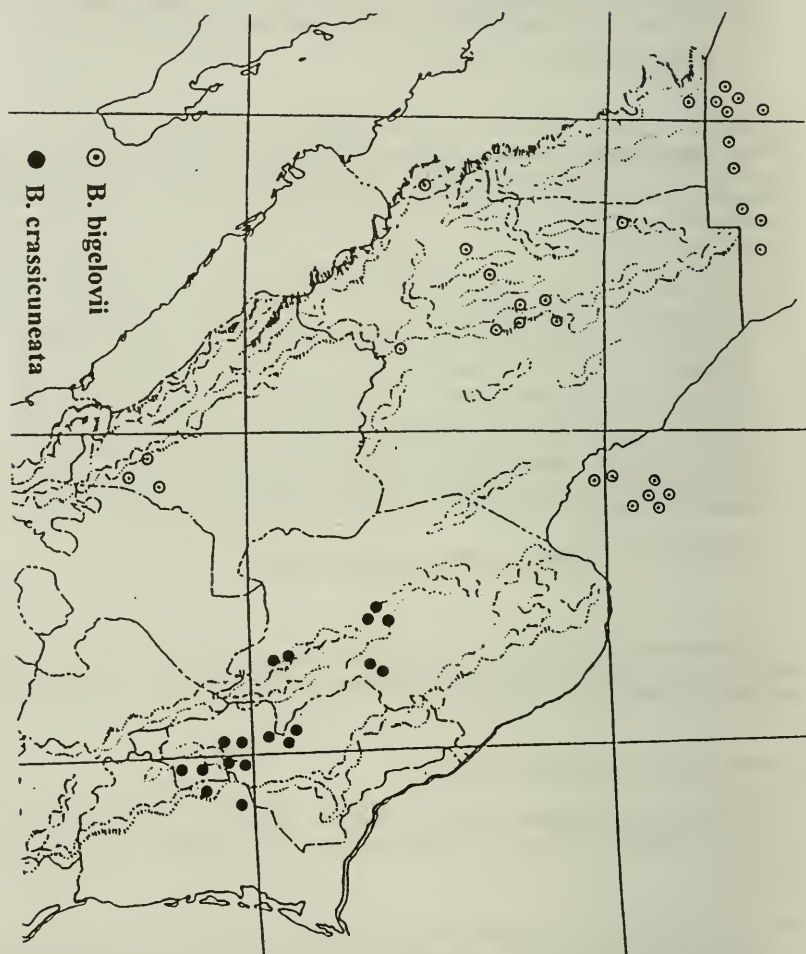
KEY WORDS: *Baccharis*, Asteraceae, Astereae, México

In preparation for a floristic treatment of the Mexican species of *Baccharis*, several taxonomic formalities are necessary, including description of a new species and elevation of another taxon to specific rank.

A new species from northeastern México

Plants from the Mexican states of Coahuila, Nuevo León, and Tamaulipas previously identified as *Baccharis bigelovii* A. Gray are recognized here as a distinct species.

Baccharis crassicuneata Nesom, *spec. nov.* TYPE: MEXICO. Coahuila: Sierra de la Madera, high crest of main ridge about 2 km E of Picacho de Zozaya, 13 Sep 1941, I.M. Johnston 9034 (HOLOTYPE: LL!; Isotype: GH!).



Map 1. Distribution of *Baccharis crassicuneata* and *B. bigelovii*.

Baccharide bigelovii A. Gray similis sed foliis brevioribus cuneatis dentibus paucioribus, capitulis majoribus, acheniis transversim corrugatis, et pappo valde accrescenti differt.

Dioecious, woody perennials from woody rhizomes, 3-6(-10) dm tall, stems and leaves glabrous and glutinous. Leaves evenly distributed on the stems, the blades thick, papillate, mostly cuneate, 3-nerved with 2 strong laterals diverging from near the very base of the blade, 8-28 mm long, 2.5-14.0 mm wide, 2-4 times longer than wide, abruptly attenuate to the petiolar region 3-7 mm long, margins with 2-7 pairs of teeth on the distal 1/2-2/3, the teeth blunt or with short, sharp, indurate mucros. Capitulescence corymboid to somewhat rounded, produced mostly above the level of the leaves. Phyllaries in 3-5 regularly gradate series, the inner 5 mm long (pistillate) and 3.0-3.5 mm long (staminate), the outermost ca. 1/4 as long, apices acute to rounded. Achenes 2.0-2.2 mm long, 5-nerved, transversely wrinkled, minutely glandular at the base; pappus bristles in 2-3 series, strongly accrescent (pistillate), elongating to nearly twice the length of the involucre.

México: central Coahuila through Nuevo León and into northern Tamaulipas (Map 1); rocky areas (limestone and gypsum), shrubby hillsides or in oak, oak-cypress, pine, or pine-fir forests, 1000-2900 m; Aug-Nov.

Additional collections examined: MEXICO. Coahuila: Sierra de la Madera SE and SSE of Rancho Cerro de la Madera, *Chiang et al.* 9438 (LL); ca. 35 air km W of Cuatro Ciénegas in Canyon de la Hacienda, Sierra de la Madera, *Henrickson* 11884 (LL); Sierra de Gloria, SE of Monclova, *Marsh* 1996 (GH); Saltillo, *Palmer* 323 (GH); SE of Monclova, *Palmer* 537 (GH); 20 mi E of the Ford Clock in Saltillo, Hwy 40, *Smith et al.* 782 (LL). Nuevo Leon: Las Placetas, gyp hillside, *Hinton et al.* 19822 (TEX, pistillate) and 19823 (TEX, staminate); above 18 de Marzo, pine woods, *Hinton et al.* 19802 (TEX); near Río de San José, *Hinton et al.* 21517 (TEX); near Río de San José, *Hinton et al.* 21567 (TEX); La Poza to Río de San José, *Hinton et al.* 21716 (TEX); Dulces Nombres, *Meyer & Rogers* 2952 (GH,MO); Mpio. Zaragoza, Cerro del Viejo, 15 mi W of Dulces Nombres, *Meyer & Rogers* 3025 (GH,MO); Mpio. Montemorelos, E slope of Sierra de la Cebolla, *Muller* 2884 (GH,LL); Monterrey, *C.H. & M.T. Mueller* 262 (GH,LL); Mpio. Montemorelos, 6 km SE of La Trinidad, Sierra Cebolla, *Patterson* 6142 (TEX); Chipinque, SW of Monterrey, *Pennell* 17254 (GH); ca. 31.1 mi W of Linares on hwy toward Iturbide, *Poole* 2433 (TEX); 6 mi W of Dieciocho de Marzo, W of Galeana, *Sundberg* 3122 (TEX); 6.9 mi N of Galeana on road to San Lucas, *Turner* 15567 (TEX); ca. 15 mi NW of Galeana, *Turner & Davies* A-48 (TEX-2 sheets). Tamaulipas: Sierra de San Carlos, vicinity of Marmolejo, *Bartlett* 10914 (GH,LL); Hidalgo, El Mirador, *Hinton et al.* 24647 (TEX).

Baccharis crassicuneata has been identified as *Baccharis bigelovii* A. Gray, but the two species differ in a number of morphological features as well as their geographic distributions. Both, however, are members of *Baccharis* sect. *Aristidentes* Nesom (Nesom 1990), although the new species is unusual in that group in its blunt foliar teeth and minute glands at the base of the achenes.

Baccharis bigelovii occurs in trans-Pecos Texas, southern New Mexico, southeast Arizona, and northeastern México (Chihuahua, Durango, Sonora), its range

completely separate from that of *B. crassicuneata*. The distribution of *B. bigelovii* does overlap, however, with *B. thesioides* Kunth and putative intermediates between these two species are sometimes encountered. The difference between *B. bigelovii* and *B. thesioides* lies primarily in leaf shape, other morphological features being essentially identical. *Baccharis sulcata* (including *B. potosina* A. Gray and *B. havardii* A. Gray), which is sympatric with *B. crassicuneata*, forms a third closely related member of the "*B. thesioides* complex" (*B. thesioides*, *B. bigelovii*, and *B. sulcata*), which is distinct as a unit from *B. crassicuneata*.

The newly recognized species can be morphologically distinguished from *Baccharis bigelovii* by the following contrasts.

1. Leaves dark green, glutinous, the blades mostly cuneate, 8-28 mm long, 2.5-14.0 mm wide, 2-4 times longer than wide, the margins with 2-7 pairs of teeth on the distal 1/2-2/3; pistillate involucre ca. 5 mm long, staminate involucre 3.0-3.5 mm long; phyllaries oblong to oblong-ob lanceolate or oblong-lanceolate; pappus strongly accrescent to ca. 8 mm long at maturity, nearly twice the length of the involucre; achene surface transversely wrinkled at maturity..... *B. crassicuneata*
1. Leaves yellow-green, usually not evidently glutinous, the blades obovate to broadly oblanceolate, 24-40 mm long, 4-16 mm wide, 2.5-6.0 times longer than wide, the margins with 6-11 pairs of teeth on at least the distal 3/4; pistillate involucre ca. 4 mm long, staminate involucre 3.5-4.0 mm long; phyllaries lanceolate; pappus ca. 3.5 mm long at maturity, ca. the same length as the involucre; achenes relatively smooth-surfaced at maturity..... *B. bigelovii*

The *Baccharis multiflora* group and a new combination

The *Baccharis multiflora* group, as delimited here (see key below), includes *B. multiflora* Kunth, *B. brevipappa* (McVaugh) Nesom (see below), *B. zamoranensis* Rzed., *B. serrifolia* DC., *B. sordescens* DC., and *B. mexicana* Cuatr. These entities form a major portion of the group described by Nesom (1990) as *Baccharis* sect. *Aristidentes* --- the other species of the section are *B. palmeri* Greenm., *B. plummerae* A. Gray, *B. crassicuneata*, and those of the *B. thesioides* complex. Sect. *Aristidentes* is characterized by leaves with papillate punctations, margins closely serrulate, usually with aristate teeth, pedicellate heads in a corymboid capitulescence, and eglandular achenes with 5(-6) relatively thick ribs. Within the section, the *B. multiflora* group is recognized by an erect but weak-stemmed habit and the production of crinkly, viscid, usually reddish-brown hairs.

McVaugh (1972, 1984) recognized three varieties within *Baccharis multiflora* --- var. *multiflora*, var. *brevipappa* McVaugh, and var. *herbacea* McVaugh. The status of var. *herbacea* remains to be investigated more thoroughly (comments below); morphology and geography indicate that var. *brevipappa* warrants recognition at specific rank.

Baccharis brevipappa (McVaugh) Nesom, *comb. nov.* BASIONYM: *Baccharis multiflora* Kunth var. *brevipappa* McVaugh, *Contr. Univ. Michigan Herb.* 9:363. 1972. TYPE: MEXICO. Jalisco: headwaters of R'o Mascota S of El Rincón,

20-25 km SE of Talpa de Allende, 1700-1900 m, 3-4 Apr 1965, R. McVaugh 23463 (HOLOTYPE: MICH).

Weak-stemmed, subsucculent shrubs; leaves lanceolate-elliptic to narrowly elliptic or oblong-elliptic, (4-)8-13 cm long, 1-3 cm wide, 4-6(-8) times longer than wide, pinnate-veined, rarely 3-nerved; staminate heads 3.0-3.5 mm long; pistillate heads 3.5-4.5 mm long, with the pappus 2.5-4.5 mm long; phyllaries rarely purple-tipped.

México: Durango, Zacatecas, Jalisco, Aguascalientes, and Michoacán (Map 2); oak, pine, pine-fir, or fir forests, at elevations of 1300-3000 meters; flowering March through April (to November in Durango).

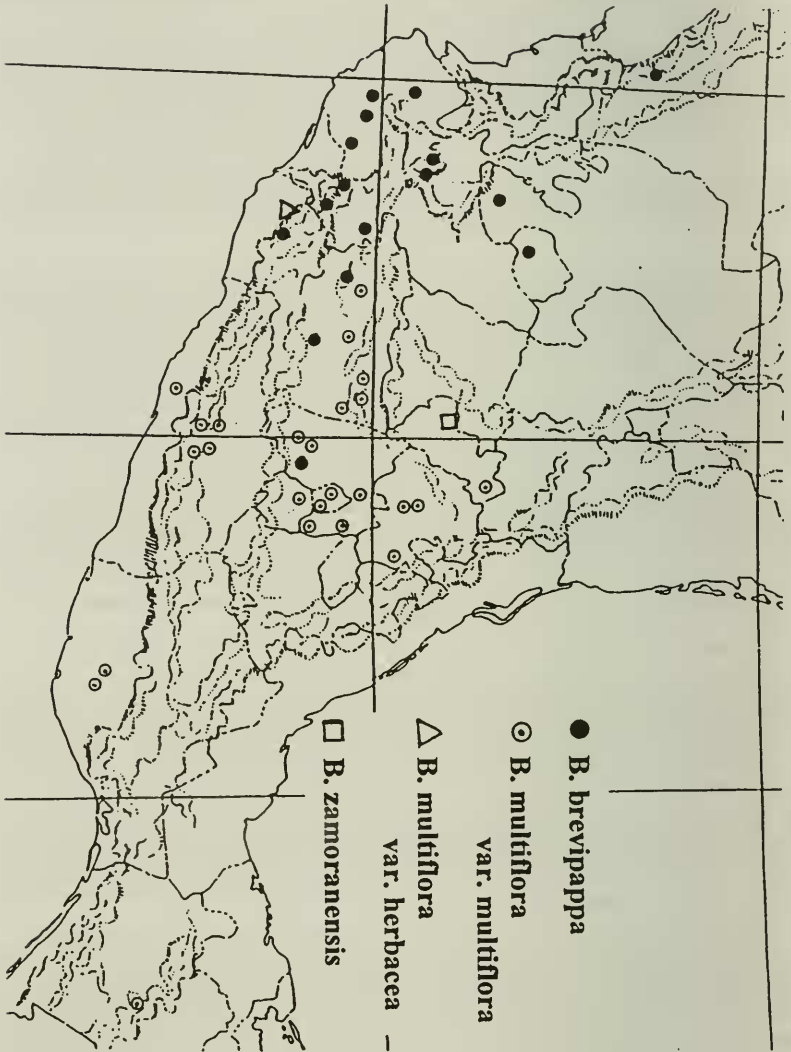
These plants differ from *Baccharis multiflora* in their subsucculent habit and relatively diffuse inflorescence (more similar to *B. serrifolia*), longer leaves, smaller heads with barely accrescent pappus, and in their separate geographic range. The range of *B. brevipappa* closely approaches that of *B. multiflora* in northern Michoacán and the two species are sympatric in western Edo. México, where intermediates apparently are rare or none. The features of *B. brevipappa* were noted and discussed by McVaugh (1972, 1984); the difference here in interpretation of its taxonomic rank stems from study of the whole *B. multiflora* group and a species concept consistent with that applied to other species of Mexican *Baccharis*.

Several *Baccharis* collections from central Guerrero are similar to *B. brevipappa* in their relatively long leaves (5-7 cm long) averaging 4-5 times longer than wide, and their relatively small staminate heads (3.0-4.5 mm long). In contrast, the erect habit and corymboid inflorescence, the longer pistillate involucre (5.0-5.5 mm long), purplish phyllaries, and the longer pistillate pappus (6 mm) are more like *B. multiflora*, as these collections have been identified here.

Baccharis multiflora Kunth var. *herbacea* McVaugh, Contr. Univ. Michigan Herb. 9:364. 1972. TYPE: MEXICO. Michoacán: Coalcomán, pine-fir forests on limestone, near summits ca. 25 km SW of Aserradero Dos Aguas, nearly W of Aguililla, 2400-2500 m, 6 Mar 1965, R. McVaugh 22846 (HOLOTYPE: MICH; Isotype: LL!).

Erect, rhizomatous subshrubs up to 1 m tall, stems and leaves sparsely pilose-puberulent with brownish, viscid hairs; leaves thin, with a raised reticulum of veins, elliptic, 2-4 times longer than wide; capitulescence a relatively few-headed corymb; mature pistillate pappus 6-7 mm long.

As described by McVaugh, var. *herbacea* is known from only the type collection (the type locality imbedded within the range of *Baccharis brevipappa*, Map 2), although similar plants have been collected in Hidalgo and Durango. It is related to *B. brevipappa* and *B. multiflora* but distinct from both of them. If further collections show the morphology of var. *herbacea* to be constant, this entity warrants recognition at specific rank. In the forthcoming floristic treatment, it is tentatively maintained in McVaugh's placement at varietal rank within *B. multiflora*.



Map 2. Distribution of *Baccharis brevipappa*, *B. multiflora*, and *B. zamoranensis*.

Key to the species of the *Baccharis multiflora* group

1. Stems and leaves essentially glabrous, usually heavily glutinous..... *B. mexicana*
1. Stems and leaves distinctly hairy, usually not glutinous.(2)
 2. Leaves thickly puberulous, with prominent, abundant, sessile resin droplets, these especially visible on the lower leaf surfaces..... *B. sordescens*
 2. Leaves variably pubescent but without prominent, sessile resin droplets (3)
3. Leaves lanceolate-elliptic to narrowly elliptic or oblong-elliptic, (4-)7.5-13 cm long, 3.5-6.0(-8) times longer than wide, pinnate-veined; staminate heads 3.0-3.5 mm long; pistillate heads 3.5-4.5 mm long; pappus 2.5-4.5 mm long; phyllaries usually not purple-tipped..... *B. brevipappa*
3. Leaves elliptic, 2.5-5.0(-8) cm long, 2.0-3.5(-5) times longer than wide.(4)
 4. Phyllaries not purplish; staminate heads 2.5-4.0 mm long; pistillate heads 4.5-5.0 mm long, with mature pappus 4-5 mm long. *B. serrifolia*
 4. Phyllaries usually purplish, at least distally.(5)
5. Leaves glabrous, distinctly 3-nerved, with indistinct petioles, toothed only on distal half of margins; staminate heads 3-4 mm long; pistillate heads 4-6 mm long, with mature pappus 4-5 mm long..... *B. zamoranensis*
5. Leaves puberulent at least on the lower surfaces, pinnate- to 3-nerved, with distinct petioles 5-10 mm long, margins toothed from well below the middle; staminate heads 4.5-5.5 mm long; pistillate heads 6-8 mm long, with mature pappus 6-8 mm long..... *B. multiflora*

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